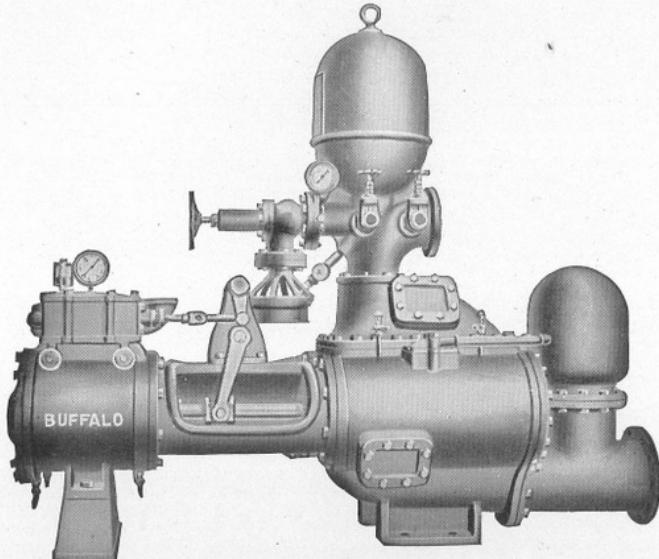


# BUFFALO

Steam Underwriter  
Fire Pumps



Bulletin 916

**Buffalo Steam Pump Co.  
Buffalo, N. Y.**

New York  
Boston  
Philadelphia  
Pittsburgh

Cleveland  
Detroit  
Chicago  
St. Louis  
Los Angeles

New Orleans  
Atlanta  
Minneapolis  
Denver

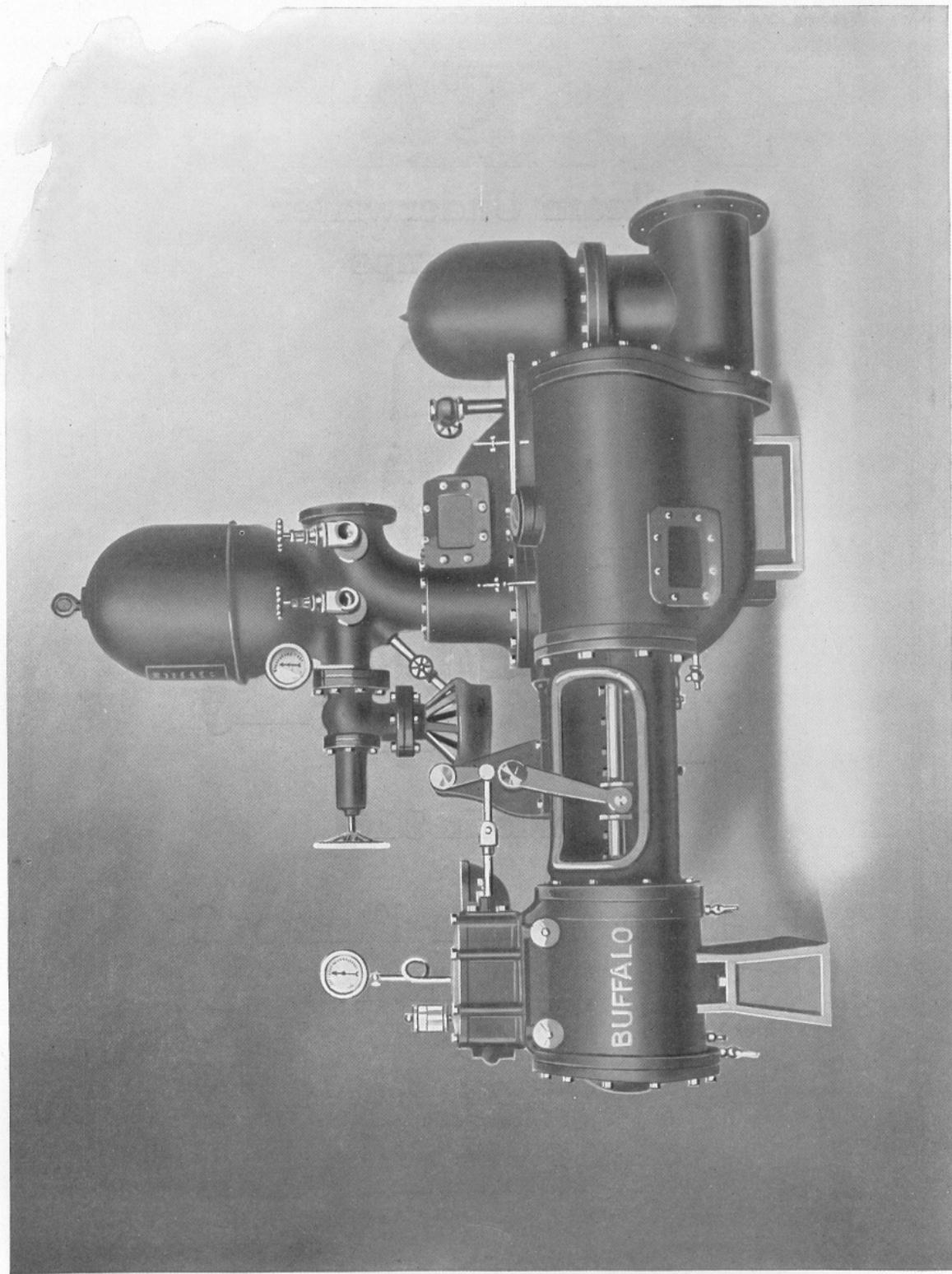
**Canadian Blower & Forge Co., Ltd.  
Kitchener, Ont., Canada**

Toronto      Montreal      Calgary      Vancouver      St. John.

1000 Gallon Underwriter

Fig. 726

Size 18 x 10 x 12.



# 1,000 Gallon Duplex Underwriter Fire Pump

## SPECIFICATIONS

**Note:** Specifications of other sizes are exactly similar to this, but with proper changes in pipe sizes, etc., for which see table of sizes.

Similar to Fig. 726, page 2 of our Bulletin 916.

**Type:** Standard Duplex Underwriter type conforming to specifications of the Board of Fire Underwriters and guaranteed to be acceptable to them. All extra fittings such as gauges, vacuum chamber, relief valve with discharge cone, brass priming pipes, stroke gauge, capacity plate, hand oil pump, sight feed lubricator and four hose valves of standard type and size are to be furnished.

**Size:** 18x10x12 Duplex.

**Capacity:** 1000 Gallons per minute, Underwriters' rating.

**Piston Travel:** 70 revolutions per minute.

**Steam Cylinders:** Close grained cast iron of sufficient thickness to permit reboring. Steam cylinder will be designed for a working pressure of 150 pounds.

**Piston Rings:** Hard elastic iron carefully fitted in place.

**Steam Pistons:** Close grained cast iron with sides machined.

**Steam Valves:** "D" slide valves, faces and seats hand scraped to true fit.

**Steam Ports:** Ample area, milled to template.

**Cushion Valves:** Furnished on steam cylinders to regulate steam cushion.

**Piston Rods:** Best tobin bronze carefully finished.

**Valve Rods:** Tobin bronze.

**Valve Rod Heads and Rocker Arms:** Steel castings annealed, machined and polished.

**Valve Rod and Cross-head Connecting Links:** Steel castings annealed, machined and polished.

**Levers:** Steel castings annealed, machined and polished.

**Valve Gear Pins:** Bessemer steel, case hardened.

**Yoke:** Cast iron, very heavy.

**Water Plungers:** Hard cast brass (if preferred, Packed Piston style Underwriter will be furnished though Plunger and Ring design is standard).

**Bushings:** Of cast brass, accurately bored, with tobin bronze studs.

**Water End:** Will be of cast iron to withstand maximum rated water pressure of 240 pounds per square inch.

**Valve Seats:** Best bronze carefully machined.

**Valve Springs:** Spring brass.

**Valves:** Rubber, Underwriter composition, protected from spring by brass valve plates having raised bead.

**Air Chamber:** Air and vacuum chamber with suction tee furnished.

**Pipe Connections:** 4" Steam, 5" Exhaust, 12" Suction, 8" Discharge.

**Extras:** Steam cylinder lagging, governor, base plate.

**Guarantee:** This machinery is to be free from latent defects in material and workmanship, and should any part of it be found within one year of date of shipment to have been defective at the time furnished, we will repair said part, f. o. b. our works or will furnish without charge, f. o. b. our works, a similar part to replace it; provided the original part is returned to our works, and our inspection establishes the claim.

We assume no responsibility for damage or expense which may be claimed due to defective machines or material furnished beyond the replacement f. o. b. our factory of new parts. If repairs be necessary, our written consent must be obtained in order to uphold claim. ,

**Memo.**—These specifications must of necessity be very brief and in outline only. The pump will, however, conform in all details to the specifications of the Underwriters.

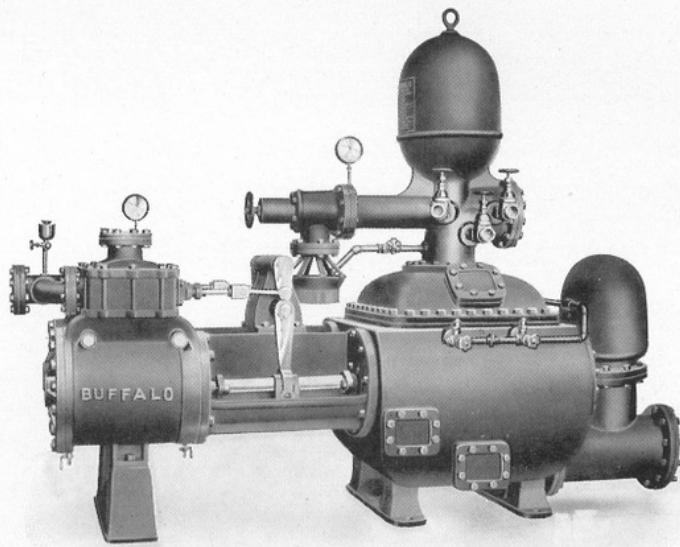


Fig. 728

Size, 20x12x16

"Underwriter Pump" is the name adopted by the Associated Factory Mutual Fire Insurance Companies, to designate a duplex steam fire pump, built in strict accordance with the latest revised edition of the specifications issued by them.

The principle points of difference between the Underwriter Pump and the ordinary commercial pump are:

1st—Its steam ports and water passages and air chamber are made much larger than in common trade pumps, so that a larger volume of water can be delivered in an emergency without water hammer.

2nd—It is "rust-proofed," that it may start instantly after being idle, by making its piston rods and valve rods of tobin bronze, instead of steel; its water pistons, stuffing boxes and rock shaft bearings of brass, instead of cast iron. Its valve levers are made of steel or wrought-iron forgings, or of steel castings.

3rd—The following necessary attachments are all included in the price of the Underwriter Pump, viz.: A vacuum chamber, two pressure gauges, a relief valve, a set of brass priming pipes, 2 to 6 hose valves depending on size of pump, a stroke gauge, a capacity plate, a hand oil pump, a sight-feed lubricator and a cast-iron relief valve with discharge cone and air vent connection.

To maintain 100 pounds water pressure while operating at full speed this pump requires the following boiler horse power: 500 gallon pump, 100 H. P. at 40 pounds steam pressure; 750 gallon pump, 115 H. P. at 45 pounds steam pressure; 1000 gallon pump, 150 H. P. at 45 pounds steam pressure; 1500 gallon pump, 200 H. P. at 50 pounds steam pressure. In some instances it is advisable to install a larger pump than the existing boiler can drive at full capacity, as a small boiler will drive a 750 gallon pump at the 500 gallon speed with as good economy as it can drive the 500 gallon pump at full speed. When this is done, the pump does not need to be changed when the plant is enlarged and the boiler power increased.

Code Word Brass Fitted Including All Fittings	Number of Gallons Underwriters Rating	Diameter of Steam Cylinders Inches	Diameter of Water Plungers Inches	Stroke Inches	Number of $2\frac{1}{2}$ Inch Hose Valves	Number of Revolutions per Minute	Pipe Sizes				Approximate Width and Length Inches
							Steam	Exhaust	Suction	Discharge	
Dfkla	500	14	7	12	2	70	3	4	8	6	37x110
Dfkot	750	16	9	12	3	70	3½	4	10	8	42x114
Dfkpe	1000	18	10	12	4	70	4	5	12	8	48x120
Dfkit	1500	20	12	16	6	60	5	6	14	10	52x146

Prices include fittings as specified by Underwriters.

**Note:**—In ordering, forward prepaid to our factory at North Tonawanda, N. Y., a hose coupling to be used as a template for threading hose valves on pumps, as different cities have different hose coupling standards. The template sent us should be carefully marked for identification and will be returned with the pump in box of fittings accompanying same.

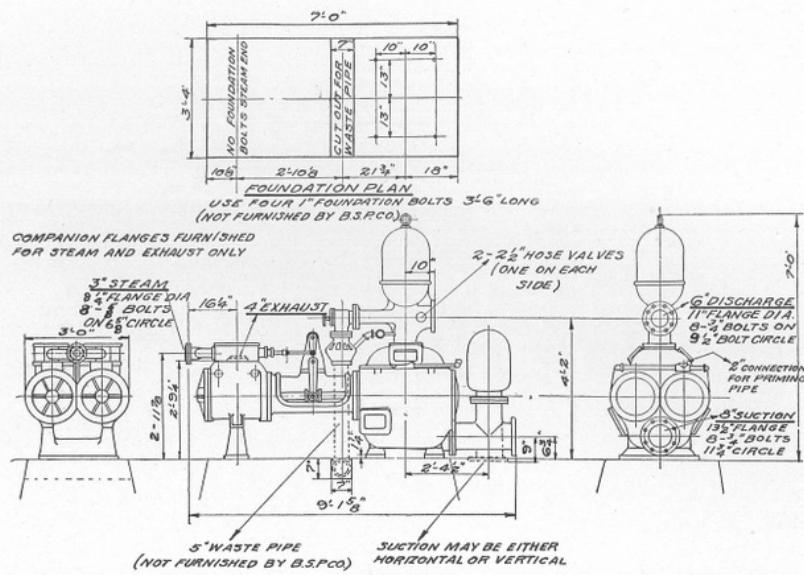


Fig. 721

Outline Dimensions 500 gal. Underwriter. (Prints certified correct for construction are issued only on receipt of order.)

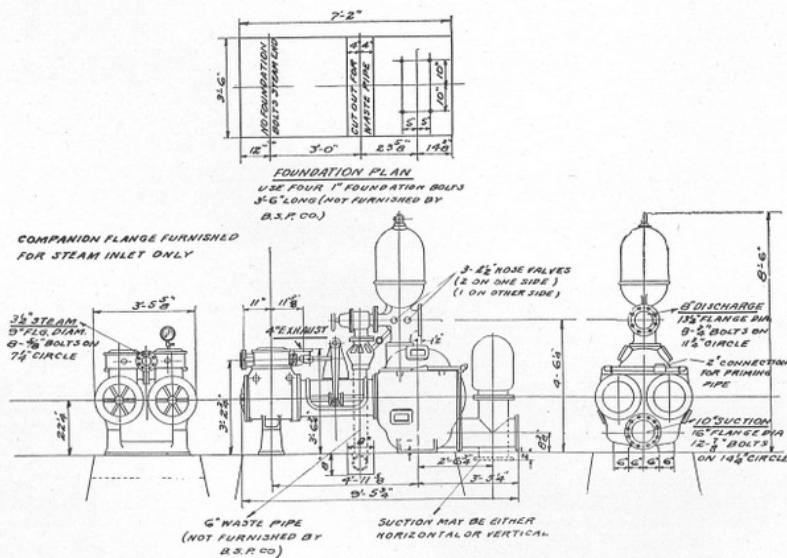


Fig. 722

Outline Dimensions 750 gal. Underwriter. (Prints certified correct for construction are issued only on receipt of order.)

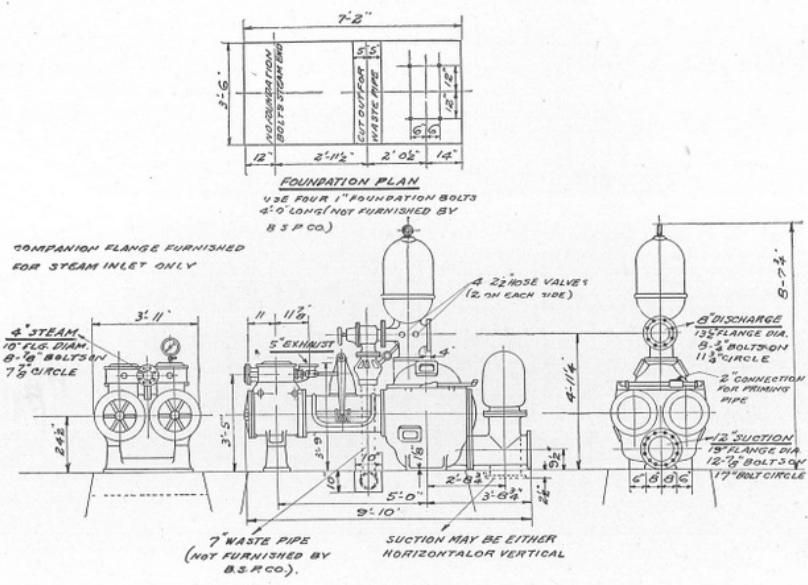


Fig. 723

Outline Dimensions 1000 gal. Underwriter. (Prints certified correct for construction are issued only on receipt of order.)

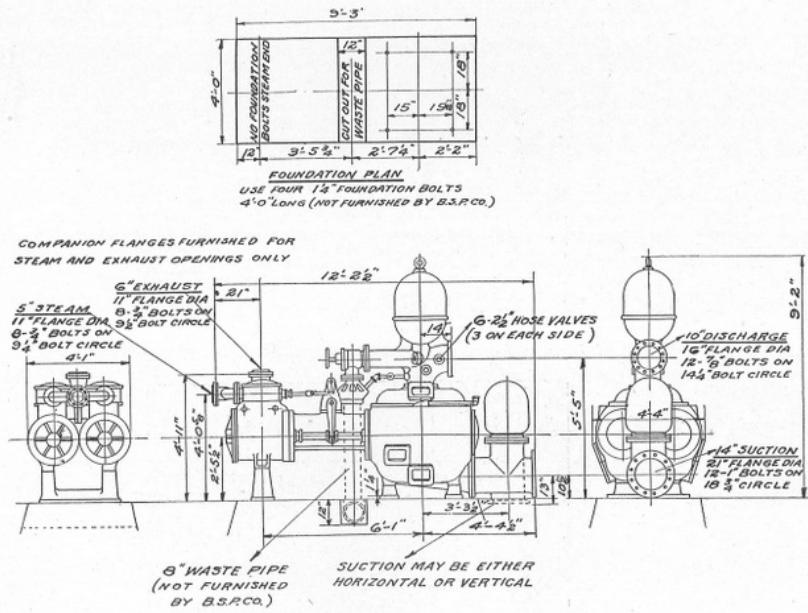


Fig. 724

Outline Dimensions 1500 gal. Underwriter. (Prints certified correct for construction are issued only on receipt of order.)

## UNDERWRITER FOOT VALVES 100-125 Pounds Pressure

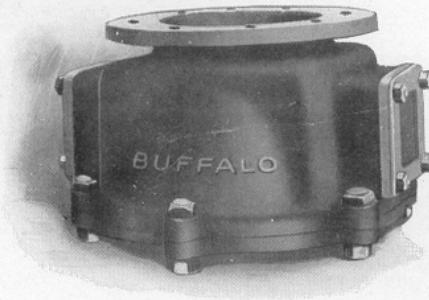


Fig. 1150

**Use:** On suction lines of Steam and Centrifugal Underwriter Fire Pumps to retain water, avoiding necessity of repeated priming.

### Specifications

**Body:** Cast iron.

**Bottom Plate:** Bronze, bolted to body.

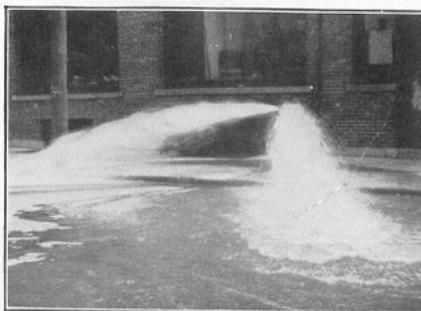
**Valves:** Swing flaps, leather faced, hinged.

**Valve Seats:** In bottom plate.

**Strainer:** None allowed on Underwriter Foot Valves.

**Openings:** Flanged.

Size Inches	Code Word
6	QAPAV
8	QAPDI
10	QAPEW
12	QAPHO
14	QAPKD
15	QAPNC



Underwriters' Test.

**SCANNED BY: AEM OF LOCKPORT NY USA**

**POSTED ON: SEPTEMBER 27, 2016**

**EDITED BY: BRIAN D. SZAFRANSKI**

**ELMA, NEW YORK USA**

**COURTESY OF: WESTERN NY GAS & STEAM ENGINE ASSOCIATION**

**ALEXANDER NEW YORK USA**

**WWW.ALEXANDERSTEAMSHOW.COM**

**NOTE: ORIGINAL DOCUMENT HAD WATER DAMAGE**